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NICOTINIC ACETYLCHOLINE RECEPTOR α4 SUBUNIT GENE VARIATION ASSOCIATED WITH CHINESE HAN PATIENTS WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER

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Previous pharmacological, human genetical, and animal models have implicated the nicotinic acetylcholine receptor α4 subunit (CHRNA4) gene in the pathogenesis of ADHD. The objective of this study is to examine genetic association between single nucleotide polymorphisms (SNPs) in the CHRNA4 gene (rs2273502, rs1044396, rs1044397 and rs3827020 loci) and ADHD. Both case-control and family-based design were used in this study. Children aged 6 to 16 years were interviewed and assessed with the CBCL and CPRS-R to identify probands.No significant differences in frequency distribution of genotypes or alleles between the case and control groups were found. However, further haplotype analyses showed CCGG haplotype on risk for ADHD in 164 case-control sample and TDT analysis suggested that the allele C of rs2273502 over-transferred in 98 ADHD parent-offspring trios. Our findings suggest that CHRNA4 gene may play a role in the pathogenesis of ADHD, and further work is necessary to replicate and confirm what role the CHRNA4 gene may play in the etiology and pathogenesis of ADHD in large independent samples.

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